



SEQUENCE LISTING

<110> Rybak, Susanna M.
Newton, Dianne L.
Goldenberg, David M.
The Government of the United States of America
as represented by The Secretary of the
Department of Health and Human Services

<120> Immunotoxins Directed Against Malignant Cells

<130> 015280-325200US

<140> US 09/918,887
<141> 2001-07-30

<150> US 60/046,895
<151> 1997-05-02

<150> US 09/071,672
<151> 1998-05-01

<160> 4

<170> PatentIn Ver. 2.1

<210> 1
<211> 104
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RNase A derived from
Rana pipiens, "onc protein"

<400> 1
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1 5 10 15
Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys Asp
20 25 30
Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile Cys
35 40 45
Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe Tyr
50 55 60
Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu Lys
65 70 75 80
Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro Val
85 90 95
His Phe Val Gly Val Gly Ser Cys
100

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<210> 2
 <211> 249
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:nucleic acid encoding
 "onc protein"

<400> 2
 gatgttgatt gtgataatat catgtcaaca aacttggtcc actgcaagga caagaacact 60
 tttatctatt cacgtcctga gccagtgaag gccatctgta aaggaattat agcctccaaa 120
 aatgtgttaa ctacctctga gttttatctc tctgattgca atgtaacaag caggccttgc 180
 aagtataaat taaagaaatc aactaataaa ttttgtgtaa cttgtgaaaa tcaggcacca 240
 gttcatttt 249

<210> 3
 <211> 83
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:"onc protein", positions
 16-98 of SEQ ID NO:1

<400> 3
 Asp Val Asp Cys Asp Asn Ile Met Ser Thr Asn Leu Phe His Cys Lys
 1 5 10 15
 Asp Lys Asn Thr Phe Ile Tyr Ser Arg Pro Glu Pro Val Lys Ala Ile
 20 25 30
 Cys Lys Gly Ile Ile Ala Ser Lys Asn Val Leu Thr Thr Ser Glu Phe
 35 40 45
 Tyr Leu Ser Asp Cys Asn Val Thr Ser Arg Pro Cys Lys Tyr Lys Leu
 50 55 60
 Lys Lys Ser Thr Asn Lys Phe Cys Val Thr Cys Glu Asn Gln Ala Pro
 65 70 75 80
 Val His Phe

<210> 4
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:carboxy terminal
 sequence of RFB4-PE35KDEL and LL2-PE38KDEL chimeric
 immunotoxins with Pseudomonas exotoxin A (PE) modified
 by KDEL endoplasmic reticulum retention sequence

<400> 4
 Lys Asp Glu Leu
 1